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California Energy Commission
Dockets Office
Attn: Docket No. 03-RPS-1078
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Regarding: Calpine Corporation's comments on the March 25, 2003 Staff Workshop in the Renewable Portfolio Standard (RPS) Proceeding

Dear Energy Commission:

Calpine appreciates the opportunity to submit the following comments to the staff workshop. We have provided answers to the questions posed by the collaborative staff regarding incremental geothermal. Additionally, we have provided comments regarding eligibility of existing geothermal facilities to participate in the Annual Procurement Target and the criteria for evaluating the repowering of existing facilities.

Incremental Geothermal

1. Was any geothermal energy from a facility that began operating before September 26, 1996 under contract to an Investor Owned Utility (IOU) during 2001? If so, is the expectation that those sales of geothermal generation would become part of that IOU's RPS baseline?

   Yes, many geothermal facilities in California and Nevada sold power to California IOUs under Standard Offer QF contracts in 2001.

2. If an IOU contracted for geothermal generation from a facility that began operation before September 26, 1996 as part of its Transitional Procurement, and if that energy is not determined to be "incremental" geothermal energy pursuant to SB 1078, would that energy become an "adjustment" to that IOU's baseline?

   Geothermal generation procured through the Transitional Procurement was done pursuant to CPUC decisions D.02-08-071 and D.02-10-062 prior to the January 1, 2003 effective date of SB 1078. These sales should be counted toward the one percent purchase requirement as provided for in these CPUC decisions. The CPUC decided this issue in Resolution E-3809 (approving Southern California

Edison's renewable power purchase agreements), Finding 14, which states:

"Any procurement pursuant to the PPAs is deemed part of SCE's 'baseline' quantity of eligible renewable resources for purposes of Section 399.15 of the Public Utilities Code or other applicable law."

And Finding 15, which states:

"Any procurement pursuant to the PPAs is deemed transitional procurement by SCE from a renewable resource for purposes of determining SCE's compliance with any obligation that it may have pursuant to D.02-08-071 and D.02-10-062, or other applicable law to procure an additional 1% of its annual electricity sales from renewable resources."

3. If geothermal energy purchased by an IOU as part of its Transitional Procurement is determined to be "incremental" pursuant to SB 1078, would that energy count toward fulfillment of that IOU's RPS Annual Procurement Target? Would such energy be eligible for Supplemental Energy Payments (SEP) pursuant to SB 1038?

All renewable energy procured under the Transitional Procurement, regardless of technology, should be counted in the same fashion with regard to the IOU's RPS Annual Procurement Target. Again, the CPUC decided this issue in Resolution E-3809, Finding 14 as noted above.

4. If the Energy Commission identifies incremental geothermal generation that is not yet under contract to a retail seller, and a retail seller contracts for that incremental generation through a future RPS solicitation, should that energy be eligible for Supplemental Energy Payments?

Yes. Incremental generation, like new generation, that was developed since September 26, 1996 should be eligible for SEP Energy Payments when the generator enters into a contract with an IOU. At such time, if the incremental generation contracted by the IOU at or below the benchmark price, it would lose its SEP eligibility. SEP funds should only be able to be drawn by an eligible resource for 10 years.

5. Does the concept of incremental geothermal generation apply only to production from vapor-dominated resources, or is it applicable to liquid-dominated resources as well*?*

The reference to incremental has to do with new generation added since

September 26, 1996 to any existing geothermal facility. It is not dependant on resource type.

6. SB 1078 refers to geothermal "historical production trends." How many years of historical production should the Energy Commission consider?

   Historical production trends should be based on as many years as are necessary to establish a predictable decline trend that would be used as a measure on which to base the amount of current capital enhanced production.

7. Should such historical production trends be examined on a well-by-well, facility-by-facility basis, or for the geothermal field as a whole?

   All facilities under the same ownership and/or control and drawing from the same geothermal resource should be looked at in the aggregate, in conjunction with corresponding historical decline trends. Once the added eligible generation is determined, then it should be allocated to the generation units where evidence of capital upgrades is presented to support the allocation. (Authorization for Expenditures (AFE's) typically provide evidence of the capital upgrade that is being proposed. Other methods can also be used to justify the added production experienced.)

8. Should entities that are seeking an Energy Commission determination that a portion of their geothermal generation is incremental be required to make public any data that they use to substantiate such a claim?

   Yes. Information should be made public if they wish to seek SEP funds. The exception being that project owners should be able to keep confidential the economics used in justifying their respective capital projects.

9. What criteria should the Energy Commission use in measuring incremental geothermal production? Do the criteria differ depending on whether the geothermal resource is vapor or liquid dominated? What methodology should the Energy Commission use for either case? Should incremental generation be measured in energy (GWh) or capacity (MW) terms?

   The criteria for measuring incremental generation as discussed above should be an increase in electrical output (as measured in terms of GWh) as a result of capital investment after adjusting for resource decline. The criteria are no different for vapor or liquid dominated resources. Incremental generation is intended to address added energy generation measured in GWh terms.

10. What constitutes capital investment that results in incremental production, rather than maintenance of production? How should the Energy Commission

distinguish between investments that increase production versus investments that maintain production in the context of a declining historical production trend?

If capital improvements add to the depreciable book value of the generation unit per Generally Accepted Accounting Practices (GAAP), than it should constitute capital investment and thus the added generation capacity that results would be eligible as incremental. If the investments are treated as an expense per GAAP and therefore do not support capitalization, then the added generation would not be eligible as incremental.

11. Do investments in wastewater injection projects result in incremental production? How is this incremental production measured on a facility basis?

If the investments result in additional generation, then that added generation should be eligible as incremental. In the case of injection projects, the incremental generation is determined by annually comparing existing project output with the output expected had the project not been completed. This expected output is based on extrapolation of field production decline rates. Once the added eligible generation is determined, then it should be allocated to the units where evidence of capital investment is presented to support the allocation.

12. If the Energy Commission certifies an amount of incremental geothermal production, would that amount be a constant, or might it change over time? For example, if a declining trend is established, and it is shown that through capital investment that decline has been stabilized, might the amount that is incremental be regarded as increasing over time?

The amount of incremental geothermal production at a facility could change over time particularly in injection augmentation projects or other projects designed to mitigate production decline. Any claim of increased production would have to be accompanied by proof of new capital investment.

13. If you are an entity seeking to have the Energy Commission certify a portion of your geothermal production as incremental, what do you claim your incremental generation to be? In substantiating such claim, please detail the capital investments made, how they have contributed to incremental production, what historical production trends they have altered, and how Questions 9 – 11 are reflected in your claim.

An applicant would need to provide this documentation to the Energy Commission as part of the certification process.

14. If you are an entity who expects to dispute claims of incremental geothermal generation, on what basis do you expect to dispute such claims?

The entity that disputes the claim must demonstrate that the investment does not meets GAAP requirements for capitalization and that the added generation is not in excess of the historical decline trend for that resource and its facilities.

15. If a portion of the generation from a geothermal facility (or from a geothermal field) is determined to be incremental, and if only a portion of the generation from that unit (or from that geothermal field) is sold to an IOU pursuant to an RPS solicitation, how is one to determine whether the kilowatt-hour sold to the IOU is "incremental" or "existing?"

    It should be the seller's responsibility to determine and state whether the generation that is being sold to an IOU is incremental generation and qualifies for SEP. The seller should also demonstrate that it has correctly characterized its sales to all parties from the geothermal field as to the amount of generation that is incremental or new as determined by the CEC.

16. Within the Geysers, can steam be shifted from one generating unit to another? If so, and if incremental geothermal generation were determined on a unit-by-unit basis, could "existing" steam from one or more units be shifted to another unit so as to make that unit appear to have "incremental" generation when it really does not? If it can, how can the Energy Commission prevent such manipulation?

    Steam shifting does not result in an increase in generating capacity (incremental generation). Steam shifting could result in any field where multiple generation units are located close enough to interfere with the geothermal resource supply, and is not limited to just the Geysers. At the Geysers we have some ability to force steam from one generation unit to another when that unit is out of service. This flexibility contributes to the highly reliable nature of the Geysers as a generating resource. Pressure drops and corresponding increases in inlet pressure limit the extent to which steam shifting can be accomplished.

    Capital improvement projects resulting in increased generation are the only projects eligible to qualify for incremental generation, and steam shifting could not accomplish this. As noted in prior answers, the overall field wide production under an owner's control should be evaluated against the historical decline curve, and only the added generation to the aggregate should be counted as incremental. That aggregate amount would be then assigned to individual units based on the capital spending that had taken place. Treating the geothermal facilities under common ownership and drawing from the same geothermal resource in aggregate should eliminate any possibility of manipulation.

Eligibility of Existing Geothermal Facilities

Existing geothermal facilities in California are already eligible to participate in the RPS and to achieve the annual procurement target.

As can be seen from the language that was supplied in the back of the notice to this workshop, SB 1078 provides two methods for geothermal facilities to qualify as an eligible renewable energy resource:

1. *The first is by meeting the definition of in-state renewable electricity generation technology in Section 383.5. This definition includes all existing geothermal facilities in the state.*

2. *The second method is under item 2 and provides a way for incremental generation from existing geothermal facilities to qualify for SEP.*

This issue goes beyond utility procurement, but also includes eligibility to meet the renewable requirements of energy service providers and community aggregators. These entities may look to RECs from existing geothermal projects to meet their RPS requirements.

Repowering of Existing Renewable Facilities

All existing renewable facilities should be eligible to be repowered. The criteria that should be used to determine that a facility has been repowered is as follows:

If the new investment is greater than 80% of the depreciable book value for the generating facility, then the facility should be characterized as a repower and the entire output of the facility should be eligible for SEP.

Thank you for considering our comments. Please contact me if you have any questions regarding these issues.

Sincerely,

Jack Pigott
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